

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF THE CLAIMS:

1-16. (Canceled).

17. (Currently Amended) A method for controlling vehicle dynamics in a motor vehicle, comprising:

- recording, by at least one sensor, at least one measured value;
- generating, by at least one image sensor system, image information from surroundings of a motor-vehicle to control the vehicle dynamics, the at least one image sensor system including at least two image sensors to record a same scene for the image information;
- determining at least one fixed image point from the generated image information, each image point corresponding to a stationary object;
- determining image coordinates of at least one fixed image point in at least two images of one image sequence;
- determining a sampling vector drawn from a zero coordinate point of each of the at least two image sensors to each of the fixed image points;
- determining x, y and z component values of each sampling vector;
- determining the at least one measured value from the determined image coordinates as a function of a variation in the sampling vector component values from one image in the image sequence to a subsequent image in the image sequence, the measured value being used for vehicle dynamics control; and
- controlling, by at least one actuator, vehicle dynamics as a function of the at least one measured value and the image information.

18. (Previously Presented) The method as recited in claim 17, wherein the image sensor system includes at least one stereo camera.

19. (Canceled)

20. (Canceled)

21. (Previously Presented) The method as recited in claim 17, wherein the at least two images of one image sequence are successive.

22. (Previously Presented) The method as recited in claim 17, wherein, as a measured value, at least one of: i) a rotational vector of the motor vehicle and ii) at least one motion vector of the motor vehicle, are determined from the generated image information.

23. (Previously Presented) The method as recited in claim 17, wherein the at least one measured value is at least one of a yaw rate, a yaw angle, and a lateral acceleration of the motor vehicle.

24. (Previously Presented) A method for determining a motion of a motor vehicle, comprising:

generating image information from at least one image sensor system, the image sensor system including at least two image sensors which record a same scene of surroundings of a motor vehicle, the image sensor system being at least one stereo camera; and

determining at least one of three-dimensional rotational motion of the motor vehicle, and three-dimensional translational motion of the motor vehicle, as a function of the image information, wherein a viewing direction of a first one of the at least two image sensors is oriented towards a direction of travel and a viewing direction of a second one of the at least two image sensors is oriented towards a direction opposite to the direction of travel.

25. (Canceled)

26. (Canceled)

27. (Currently Amended) A device for vehicle dynamics control in a motor vehicle, comprising:

at least one sensor for recording at least one measured value;

at least one image sensor system including at least two image sensors, the at least two image sensors configured to record a same scene, the image sensor system generating image information from surroundings of a motor vehicle of the same scene; and

at least one actuator which is driven by a processing unit/control unit as a function of the at least one measured value for vehicle dynamics control and the image information,

wherein the processing unit/control unit includes an arrangement configured to:

determine fixed image points from the generated image information, each image point corresponding to a stationary object, an arrangement configured to

determine image coordinates of the at least one fixed image point in at least two images of one image sequence,

determine a sampling vector drawn from a zero coordinate point of each of the at least two image sensors to each fixed image point,

determine x, y and z component values of each sampling vector, and an arrangement to

determine the measured value from the image coordinates as a function of a variation in the sampling vector component values from one image in the image sequence to a subsequent image in the image sequence, the measured value being used for vehicle dynamics control.

28. (Previously Presented) The device as recited in claim 27, wherein the at least one image sensor system includes at least one stereo camera.

29. (Previously Presented) The device as recited in claim 27, wherein the processing unit/control unit includes an arrangement configured to determine at least one measured value from the generated image information, the measured value being used for vehicle dynamics control.

30. (Canceled)

31. (Previously Presented) The device as recited in claim 27, wherein the at least two images are successive.

32. (Previously Presented) The device as recited in one claim 27, wherein the processing unit/control unit includes an arrangement configured to determine at least one of i) a rotational vector of the motor vehicle, and ii) at least one motion vector of the motor vehicle, from the generated image information.

33. (Previously Presented) The device as recited in claim 27, wherein the processing unit/control unit includes an arrangement configured to determine at least one of: i) a yaw rate, ii) a yaw angle, and iii) a lateral acceleration of the motor vehicle, from the generated image information.

34. (Currently Amended) A processing unit/control unit for controlling vehicle dynamics in a motor vehicle, comprising:

an arrangement configured to process at least one measured value, which is recorded by at least one sensor, the at least one measured value being used for vehicle dynamics control;

an arrangement configured to process image information from at least one image sensor system, the image sensor system including at least two image sensors which record a same scene for the image information, the at least one image sensor system including at least one stereo camera, wherein the processing of the image information includes determining sampling vectors drawn from a zero coordinate point of each of the at least two image sensors to a fixed image point in each image of a sequence of images sensed by the image sensor system, each image point corresponding to a stationary object, and the sampling vectors being represented in a three-dimensional Cartesian coordinate system;

an arrangement configured to determine the at least one measured value as a function of a variation in the sampling vector component values from one image in the image sequence to a subsequent image in the image sequence, and

an arrangement configured to control at least one actuator for vehicle dynamics control based on the measured value and the image information.

35. (Previously Presented) The processing unit/control unit as recited in claim 34, further comprising:

an arrangement configured to determine at least one rotational vector of the motor vehicle, as a function of a variation in component values of corresponding sampling vectors

across the sequence of images, the at least one rotational vector being, at least one of a yaw rate and a yaw angle.

36. (Previously Presented) The processing unit/control unit as recited in claim 34, further comprising:

an arrangement configured to determine at least one motion vector of the motor vehicle as a function of a variation in component values of corresponding sampling vectors across the sequence of images, the at least one motion vector being a lateral acceleration.

37. (Currently Amended) A storage medium storing a computer program, the computer program, when executed by a computer, causing the computer to perform the steps of:

processing at least one measured value, which is provided by at least one sensor, the measured value being used for vehicle dynamics control;

processing image information from at least one image sensor system, the image sensor system including at least two image sensors which record a same scene for the image information;

determining at least one fixed image point from the generated image information, each image point corresponding to a stationary object;

determining image coordinates of at least one fixed image point in at least two images of one image sequence;

determining a sampling vector drawn from a zero coordinate point of each of the at least two image sensors to each fixed image point;

determining x, y and z component values of each sampling vector;

determining the at least one measured value from the determined image coordinates as a function of a variation in the sampling vector component values from one image in the image sequence to a subsequent image in the image sequence; and

controlling at least one actuator for vehicle dynamics control based on the at least one measured value and the image information.

38. (Currently Amended) A sensor unit for a motor vehicle, comprising:

at least two image sensors configured to record a same scene of surroundings of a vehicle;

an arrangement configured to generate image information regarding the surroundings of the vehicle based on the image information from the at least two image sensors, wherein the generating of the image information includes:

- determining a fixed image point in each image of a sequence of images sensed by the at least two image sensors, each image point corresponding to a stationary object,
- determining a sampling vector drawn from a zero coordinate point of each of the at least two image sensors to each of the fixed image points, and
- determining x, y and z component values of each sampling vector; and

an arrangement configured to determine at least one of a rotational vector and a motion vector as a function of a variation in the sampling vector component values from one image in the sequence of images to a subsequent image in the sequence of images.

39. (New) The method as recited in claim 11, further comprising:

- determining the existence of a yawing motion when the variation involves:
 - a change in the value of x-components of the sampling vectors of an image from a longitudinally-oriented one of the at least two image sensors, in a different direction relative to a vehicle-fixed coordinate system in which the x-direction is along a longitudinal vehicle axis, and
 - a change in the value of y-components of the sampling vectors of the image from the longitudinally-oriented image sensor, in the same direction as the vehicle-fixed coordinate system; and
- responsive to determining the existence of the yawing motion:
 - determining a yaw rate as a function of the rate of change in the x- and y-components, and
 - determining a yaw angle as a function of an integrated yaw rate.

40. (New) The method as recited in claim 11, further comprising:

- determining the existence of a rolling motion when the variation involves:
 - a change in the value of z-components of the sampling vectors of an image from a longitudinally-oriented one of the at least two image sensors, in an different direction and to a different extent relative to a vehicle-fixed coordinate system in which the x-direction is along a longitudinal vehicle axis, and

a change in the value of x-components of the sampling vectors of the image from the longitudinally-oriented image sensor to the same extent as the vehicle-fixed coordinate system; and

responsive to determining the existence of the rolling motion:

determining a roll rate as a function of the rate of change in the z- and x-components, and

determining a roll angle as a function of an integrated roll rate.

41. (New) The method as recited in claim 11, further comprising:

determining the existence of a pitching motion when the variation involves:

a change in the value of z-components of the sampling vectors of an image from a longitudinally-oriented one of the at least two image sensors, in the same direction and to the same extent as a vehicle-fixed coordinate system in which the x-direction is along a longitudinal vehicle axis, and

a change in the value of x-components of the sampling vectors of the image from the first image sensor, to the same extent as the vehicle-fixed coordinate system; and

responsive to determining the existence of the pitch motion:

determining a pitch rate as a function of the rate of change in the z- and x-components, and

determining a pitch angle as a function of an integrated pitch rate.

42. (New) The method as recited in claim 11, further comprising:

determining a velocity vector as a function of a change in one of an x-component, a y-component and a z-component of the sampling vectors of an image from one of the at least two image sensors; and

correcting the velocity vector determination by taking into account any influence by roll, pitch and yaw.

43. (New) The method as recited in claim 11, further comprising:

as a redundancy check, determining at least one of a rotational vector and a motion vector using sampling vectors of an image from a different one of the at least two image sensors.